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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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112 South West Street
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EXAMINER	
CHO, HONG SOL	
ART UNIT	PAPER NUMBER
2616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/600,357	BEERI ET AL.	
	Examiner	Art Unit	
	Hong Cho	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 23 June 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 11 is objected to because of the following informality:

Re claim 11, line 23, it cannot be seen how the queue is routed.

Claim Rejections - 35 USC § 112, Second paragraph

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 1, it is not clear what is required to repeat steps (a) to (i).

Claims 2-10 depend on claim 1 are similarly rejected.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(e) that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent,

except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 11-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al (U.S 20020048280), hereinafter referred to as Lee.

Re claim 11, Lee discloses a scheduler with input ports with virtual output queues and output ports for transferring a packet (*a scheduler for scheduling data packets transported from input-nodes to output-nodes, said data packets being associated with a set of N input-nodes each having a plurality of M queues each for queuing data packets for routing to a corresponding one of M output-nodes*, figure 7). Lee discloses a scheduler comprising arbiters (*source port modules*, figure 7, element 20) associated with input ports determining highest weight and priority queue for each input port (*at least two clusters of source port modules associated with respective subsets of input nodes for determining a highest weight queue for each input node in the respective subset associated with each cluster of source port modules*, paragraph [0056], lines 1-6), a controller connected to arbiters for transmitting a packet from the highest weight queue to an output port (*a scheduler core module coupled to all of the clusters of source port modules for determining to which output node to route the highest weight queue from each input node*, paragraph [0058], lines 4-6; figure 2), a grant unit coupled to the arbiter for sending a grant message to a input node with highest weight queue (*a grant unit for matching the output-node with the input-node having the highest priority request*,

paragraph [0058], lines 1-4) and a cross-switch (*a switching unit*, figure 1, element 24) connected to an arbiter for switching a packet to an output port (a *switching unit responsively coupled to the grant unit for enabling each input-node to transfer data to the respective output-node matching said input node*, figure 2).

Re claim 12, Lee discloses choosing the highest-weight-request for each requested output node that was raised by more than one source port module in the source port module cluster (figure 7, element 20).

Re claims 13, 14, 16 and 17, Lee discloses including data rate controller in an input port (*source port module*, figure 12, element 151) to improve scheduling efficiency (paragraph [0087], lines 1-3).

Re claims 15 and 18, Lee discloses including data rate controller in an arbiter (figure 14, element 172).

Re claim 19, Lee discloses a controller located after the maximum cluster determination unit to improve scheduling efficiency (figure 2).

Re claim 20, Lee discloses independent components operating in parallel to allow pipelined scheduling (paragraph [0028], lines 4-6).

Allowable Subject Matter

6. Claim 1 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

7. Claims 1-10 are allowable.

The following is an examiner's statement for reasons for allowance.

8. Claim 1 is allowable over the prior art of record since the cited references taken individually or in combination fail to particularly teach or fairly suggest scheduling data packets transported from input-nodes to output-nodes said data packets being associated with a set of N input-nodes each having a plurality of M queues each for queuing data packets for routing to one or more corresponding M output-nodes, said method comprising: (a) providing at least two clusters of source port modules, each source port module tracking all queues associated with a respective input-node and each cluster relating to a respective subset of available input-nodes such that each input node is associated with a respective one of said clusters, (b) for each queue in each source port module destined to an available output node, generating a weight reflecting an urgency of said queue to transmit its queued cells towards the corresponding output-node, (c) for each source port module tracking a serviceable queue, generating at least one request relating to the serviceable queue having highest weight, (d) accumulating the respective requests of each source port module in the corresponding cluster of source port modules, (e) for each cluster of source port modules, choosing requests for which: i) no two requests in the cluster relate to the same input-node, and ii) for each output-node, the chosen requests have highest weight for said output-node, (f) collecting requests from all clusters of source port modules, and determining the highest weight request in respect of each output node receiving requests from one or more input nodes, (g) sending a grant to the input-node associated with the highest weight request, (h) removing the output-node

associated with the said highest weight request from the available output node set, (i) removing the input-node associated with the said highest weight request from the available input node set, unless the input-node needs to send the highest weight request to one or more additional output-nodes and (j) repeating (a) to (i) as required.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong Cho whose telephone number is 571-272-3087. The examiner can normally be reached on Mon-Fri during 7 am to 4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

hc

Hong Cho
Patent Examiner
3/9/07

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